

# Work Order ID 59780

Friday, June 11, 2010 11:42:44 AM



Page 1

Item ID: D206-642-541

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 6/10/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 6/25/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date: 6-10-11

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3274	D								
IIN-D206-642	Rev M								

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile & type labels per PPP D206-642-541

CHG003

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

110

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

\*\*\*\*VERIFY AND INSPECT THE MATERIAL PRIOR TO USE\*\*\*\*

1- Bend FWD end of tube using bend prog D3274 FWD dwg D3274, cut fwd end of tube with saw table setup D3274.

2- remove fwd indexing ridge as per dwg D3274. Prepare for welding.

3- weld fwd cap as per dwg D3274 and OSI004

AR Aluminum Rod Batch: M112507/M114242

4- grind fwd cap weld on top surface only

5- Cut AFT end of tube at 170.9" as per dwg D3274 and deburr end.

6-Drill Aft cap pilot hole using DT8025

7 -Cleco DT8025 in position and install pilot hole drill jig DT8742A,B,C,D.  
Drill 3/16" pilot holes as per Dwg D3274

8 -Remove inner indexing ridge on aft end of skidtube as per Dwg D3274 scribe batch #

9 -Open aft end cap holes to Ø0.208" as per Dwg D3274. Deburr aft end.


DP 10-6-15

BE 10-06/15


BE 10/06/15

H 10/6/16

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA:  Date: 10/7/14

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
10.06.28	110	Aft bend is 3.185" high. R.C process, only 0.085" over elongation	CP 10.06.28 QSI 042	Acceptable. Increases drag moment, counter-acts buoyancy moment.	 10-7-1	S 10/6/14	UP 10.06.28 QSI 042	S 10/17/14

NOTE: Date & initial all entries

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Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

120

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

Hand Finishing

130

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

140

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

1 M 10/6/16

8 10/6/16

70

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Skidtubes	0.00							
	Skidtubes								
Skidtubes	<b>Memo</b>	0.00							
	1-Open Ø0.313" and 0.375" crossbolt spacer holes using DT8743 as per Dwg D3274								
	2-Deburr crossbolt spacer holes as per Dwg D3274 and blow out chips from inside the tube								
	3-Bond web in place as per Dwg D3274 & QSI 015. A/R <input type="checkbox"/> SikaFlex-291 <input type="checkbox"/> 17113519 <input type="checkbox"/> SikaFlex expire date: <input type="checkbox"/> 12/11/30 <input type="checkbox"/> Start: <input type="checkbox"/> 12/6/16 <input type="checkbox"/> Time: <input type="checkbox"/> 3:20 <input type="checkbox"/> Finish: <input type="checkbox"/> 10/6/17 <input type="checkbox"/> Time: <input type="checkbox"/> 8:50 am (Adhere for 12 hours)								
160	QC5- Inspect part completeness to step on W/O	0.00							
	QC								
Quality Control	<b>Memo</b>	0.00							

11/10/16

S 12/06/17

(10)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Customer:

Reference:

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Run Start

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

170

0.00



Skidtubes

Skidtubes

Memo

0.00

1-Bend AFT end of tube using bend prog. D3274 AFT as per dwg D3274. Install drop pins in crossbolt spacer holes to maintain web position.

2- DRILL PILOT HOLES FOR WEARPLATES USING D3274-1T2  
OPEN HOLES TO .297" . Deburr3-DRILL TOE PIN HOLE .640" DIA AS PER DWG USING DT8935 FWD  
END OF TUBEDEBURR INSIDE OF HOLE AS NECESSARY (DO NOT ENLARGE HOLES)  
REMOVE ANY FOREIGN OBJECTS INSIDE OF TUBES

4- Countersink crossbolt spacer holes as per Dwg D3274

5- prepare for welding

180

0.00



QC

Quality Control

QC5- Inspect part completeness to step on W/O

Memo

0.00

DP

10-6-23

BE 10/06/29

A-6-23

Sulda/29

@

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
10/6/24	170	height is over head by .085" measures 3.765" should be 3.100. l.c. focus		see ncr on back of page 2. 8/10/27		N/A		8 10/6/24

NOTE: Date & initial all entries

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Required Date: 6/25/2010 Req'd Qty: 1.00



Reference:

Cust Item ID:

Customer:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start  
Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190  Skidtubes	Skidtubes	0.00							
Skidtubes	<b>Memo</b> 1-Insert D2649 & D3275-1 crossbolt spacers. Weld as per QSI 004 and Dwg D3274. Remember to back drill each hole before welding the other side. Use aluminum rod A/R <input type="checkbox"/> Aluminum Rod <input checked="" type="checkbox"/> <u>M112507</u> <i>BE 10/06/29</i> 3-Grind cross bolt welds flush as per Dwg D3274. 4-Counterbore 5/16" x 0.750" deep as per Dwg D3274 and deburr. <i>BE 10/06/30</i>	0.00							
200  QC	QC5- Inspect part completeness to step on W/O	0.00							
Quality Control	<b>Memo</b>	0.00							<i>810/07/01</i> <i>AD</i>

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Start Date: 6/10/2010 Start Qty: 1.00

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Cust Item ID:

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

210

QC10- Inspect visual per QSI004- ground welds

0.00



QC

Memo

0.00

Quality Control

220

Pressure Wash per QSI005 4.3

0.00



HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch

① BK 10-7-1

230

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

Memo

0.00

Powder Coating

START TIME: 8:45  
OVEN TEMPERATURE: 320°  
FINISH TIME: 9:15

1 BK 10-7-16

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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**Work Order ID 59780**

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Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

240

QC3- Inspect Part Finish

0.00 =&gt; M 10107106

X1

Ø



QC

Memo

0.00

Quality Control

250

HandFinishing

0.00

=&gt; M 10107106

X1

Ø



HandFinish

Memo

0.00

Hand Finishing

1-Install Nut Plate as per Dwg D3274. Apply LPS-3 to Nut Plate and rivets.  
A/R ☐ N/A ☐ LPS-3 ☐ M1099562-Install inserts as per Dwg D3274. Use a drop of Sikaflex inside insert holes a  
A/R ☐ ☐ Sikaflex-291 ☐ M113519 ☐  
Sikaflex expire date: ☐ 10/11

260

QC5- Inspect part completeness to step on W/O

0.00

S 10107106

Ⓡ



QC

Memo

0.00

Quality Control

Inspect Nut Plate &amp; Inserts

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Run Start



Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

270

0.00



HandFinish

Hand Finishing

HAND FINISHING RESOURCE #1

Memo

0.00

=> 21 10/07/13

X1 0

1-Install wearpads & gaskets as per Dwg D3274.

2-Install ring as per Dwg D3274

A/R ☐ Sikaflex-291 ☐ M113519

Sikaflex expire date: ☐ 10/11

3-Inspect for foreign objects as per QSI 024

4-Spray inside of tube on both sides of web with LPS-3

A/R LPS-3 Batch: N/A

5-Install Aft Cap and seal with Sikaflex. Clean excess adhesive.

A/R ☐ Sikaflex-291 ☐ M113519

Sikaflex expire date: ☐ 10/11

280

QC5- Inspect part completeness to step on W/O

0.00



QC

Quality Control

Memo

0.00

5 10/07/14

AL

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

290

Identify as per dwg &amp; Stock Location: \_\_\_\_\_

0.00



Packaging

Memo

PPP 59777

0.00

Packaging

*6/10/14 (1)*

300

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

*MF 10-7-14*

W/O:		WORK ORDER CHANGES					
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# Picklist Print

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Work Order ID: 59780



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 6/10/2010

Required Date: 6/25/2010

Comments:

IPP Rev:B 05.09.23 Revised per D206-642 Rev. J KJ/JLM  
 IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM  
 IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
 IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

D2600-1-190

Manufactured No

110 Each

36.0000

1 1



Extrusion Round 3" 206

Location

Loc Qty

Loc Code

LG

47575

36

36

110

Each

153.0000

1 1

D3285-1

Manufactured No



Cap

Location

Loc Qty

Loc Code

LG

153

47635

4

52511

74

52647

75

150

Each

6.0000

1 1

D3282-041

Manufactured No



Float Web (206L/407)

Location

Loc Qty

Loc Code

LG

6

57539

6

190

Each

147.0000

1 1

D2649

Manufactured No



Cross Bolt Spacer

Location

Loc Qty

Loc Code

LG

147

55000

6

58545

141

12

10-6-15

BE 10/06/15

10/06/15

BE 10/06/09

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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 IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
 IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

D3275-1 Manufactured No 190 Each 71.0000 12 12



Crossbolt Spacer

Location	Loc Qty	Loc Code
LG	71	
53453	8	
57513	57	
58179	6	

12 BE 10/06/29

CR3212-4-03 Purchased No 250 Each 4,523.000 2 2



Cherry Rivet

Location	Loc Qty	Loc Code
ST311	4523	
111359	5	
112314	30	
114436	1476	
114450	1012	
114859	2000	

x2 10/07/06

D3415-041 Manufactured No 250 Each 67.0000 1 1



Nut Plate

Location	Loc Qty	Loc Code
ST056	67	
33842	67	

x1 10/07/06

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

Friday, June 11, 2010 11:42:49 AM

Page 3 / 8

Work Order ID: 59780



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 6/10/2010

Required Date: 6/25/2010

Comments: IPP Rev:B 05.09.23 Revised per D206-642 Rev. J KJ/JLM  
 IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM  
 IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
 IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

CCR264SS3-3

Purchased No

250

Each

554.0000

2

2



Cherry Rivet



## Location

## Loc Qty

## Loc Code

ST311

554

112314

4

113539

60

113973

490

ALS4-1032-130

Purchased No

250

Each

5,752.000

78

78



Insert



## Location

## Loc Qty

## Loc Code

PKG11

5000

114723

5000

ST282

305

110511

38

114407

267

ST381

447

114654

447

D3536-15

Manufactured No

270

Each

19.0000

1

1



Gasket



## Location

## Loc Qty

## Loc Code

FP

7

56055

7

FP11

12

59238

12

Friday, June 11, 2010 11:42:49 AM

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Page 3

X2 10/07/06

X78 10/07/06

V1 10/07/06

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Friday, June 11, 2010 11:42:49 AM

Page 4 / 8

Work Order ID: 59780



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 6/10/2010

Required Date: 6/25/2010

Comments:

IPP Rev:B 05.09.23 Revised per D206-642 Rev. J KJ/JLM  
 IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM  
 IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
 IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

D3536-23



Gasket

Manufactured No

270

Each

12.0000

1

1



Location

Loc Qty

Loc Code

FP011

12

58819

12

XI 10/07/06

D3536-35



Gasket

Manufactured No

270

Each

19.0000

1

1



Location

Loc Qty

Loc Code

FP012

19

58637

7

58683

12

XI 10/07/06

D3536-39



Gasket

Manufactured No

270

Each

27.0000

1

1



Location

Loc Qty

Loc Code

FP

1

51637

1

FP12

26

58215

12

58571

14

XI 10/07/06

Friday, June 11, 2010 11:42:49 AM

Shop Packet Print

Page 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Friday, June 11, 2010 11:42:49 AM

Work Order ID: 59780



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 6/10/2010

Required Date: 6/25/2010

Comments: IPP Rev:B 05.09.23 Revised per D206-642 Rev. J KJ/JLM  
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 IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
 IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

D3535-15

Manufactured No

270

Each

16.0000

1

1



Wearshoe

Location

Loc Qty

Loc Code

FP

6

56053

6

FP18

10

59236

10

XI M 10/07/06

D3535-35

Manufactured No

270

Each

15.0000

1

1



Wearshoe

Location

Loc Qty

Loc Code

FP018

15

57528

2

59237

13

XI M 10/07/06

D3535-39

Manufactured No

270

Each

13.0000

1

1



Wearshoe

Location

Loc Qty

Loc Code

FP

1

51619

1

FP18

12

58214

12

XI M 10/07/06

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Friday, June 11, 2010 11:42:49 AM

Page 6 / 8

Work Order ID: 59780



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 6/10/2010

Required Date: 6/25/2010

Comments: IPP Rev:B 05.09.23 Revised per D206-642 Rev. J KJ/JLM  
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 IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
 IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

D3535-23

Manufactured No

270 Each

11.0000

1

1



Wearshoe

Location

Loc Qty

Loc Code

FP21

11

57730

11

D3537-3

Manufactured No

270 Each

10.0000

1

1



Wearpad

Location

Loc Qty

Loc Code

FP17

10

57512

10

D3537-1

Manufactured No

270 Each

49.0000

9

9



Wearpad

Location

Loc Qty

Loc Code

FP

1

55465

1

FP17

12

57713

3

58178

9

FP18

36

59710

36

AN960C10L

NAS1149C0332  
R

Purchased

No

270

Each

0.0000

80

80



washer

1115000



x80 10/07/06

Friday, June 11, 2010 11:42:49 AM

Shop Packet Print

Page 6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

Friday, June 11, 2010 11:42:49 AM

Page 7 / 8

Work Order ID: 59780



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 6/10/2010

Required Date: 6/25/2010

Comments: IPP Rev:B 05.09.23 Revised per D206-642 Rev. J KJ/JLM  
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 IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
 IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

AN960C416 NAS1149C0463 Purchased No 270 Each 118.0000 1 1



washer



Location

Loc Qty

Loc Code

ST346

118

100993

118

D3672-1 Manufactured No

270 Each 1,315.000 2 2



Phenolic Washer



Y M 10/07/06

Location

Loc Qty

Loc Code

ST077

1315

51674

315

52505

1000

AN3C4A Purchased No

270 Each 1,525.000 80 80



BOLT



Y Z M 10/07/06

Location

Loc Qty

Loc Code

ST350

1525

114103

501

114108

14

114416

12

114523

2

114859

996

X O O M 10/04/06

Friday, June 11, 2010 11:42:49 AM

Shop Packet Print

Page 7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Friday, June 11, 2010 11:42:49 AM

Work Order ID: 59780



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 6/10/2010

Required Date: 6/25/2010

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 IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
 IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

AN4CSA

Purchased No

270 Each

519.0000

1

1



BOLT

Location

Loc Qty

Loc Code

ST346

519

110552

19

112243

500

XI 24 10/07/06

D2646

Manufactured No

270 Each

109.0000

1

1



Aft Cap

Location

Loc Qty

Loc Code

FP-4

99

57332

99

FP6

10

52663

10

XI 24 10/07/06

D3413-1

Manufactured No

270 Each

37.0000

1

1



Ring

Location

Loc Qty

Loc Code

ST473

37

51586

1

53446

23

58524

13

XI 24 10/07/06

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

**DART**

RELEASED  
07.02.12  
DEO ATTACHED

DESIGN CP	DRAWN BY PH	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
CHECKED H	APPROVED H	DRAWING NO. D3274	REV. D SHEET 1 OF 4
DATE 06.12.19		TITLE SKIDTUBE ASSEMBLY	SCALE NTS
A	04.03.15	NEW ISSUE	
B	04.08.09	MOVE SADDLE HOLE: 42.14 WAS 42.76	
C	05.03.16	ADD -043; NEW INSERTS	
D	06.12.19	NEW INSERTS, SS WEARSHOE + GASKET	

Qty -041	Qty -043	Part Number	Description
X		D3274-041	SKIDTUBE ASSEMBLY
	X	D3274-043	SKIDTUBE ASSEMBLY
1	1	D2600-1-240	EXTRUSION
1	1	D2646	AFT CAP
12	12	D2649	CROSS BOLT SPACER
12	37	D3275-1	CROSS BOLT SPACER
1	1	D3282-041	FLOAT WEB
1	1	D3285-1	CAP
1	1	D3413-1	RING
1	1	D3415-041	NUT PLATE
1	1	D3535-15	WEARSHOE
1	1	D3535-23	WEARSHOE
1	1	D3535-35	WEARSHOE
1	1	D3535-39	WEARSHOE
1	1	D3536-15	GASKET
1	1	D3536-23	GASKET
1	1	D3536-35	GASKET
1	1	D3536-39	GASKET
9	9	D3537-1	WEARPAD
1	1	D3537-3	WEARPAD
78	78	ALS7-1032-130	INSERT (or AKS4-1032-130, ALS4-1032-130, AELS-1032-130)
80	80	AN3C4A	BOLT
1	1	AN4C5A	BOLT
1	1	AN960C416	WASHER
80	80	AN960C10L	WASHER
2	2	CCR264SS3-3	RIVET
2	2	CR3212-4-03	RIVET
2	2	NAS1515H3L	WASHER

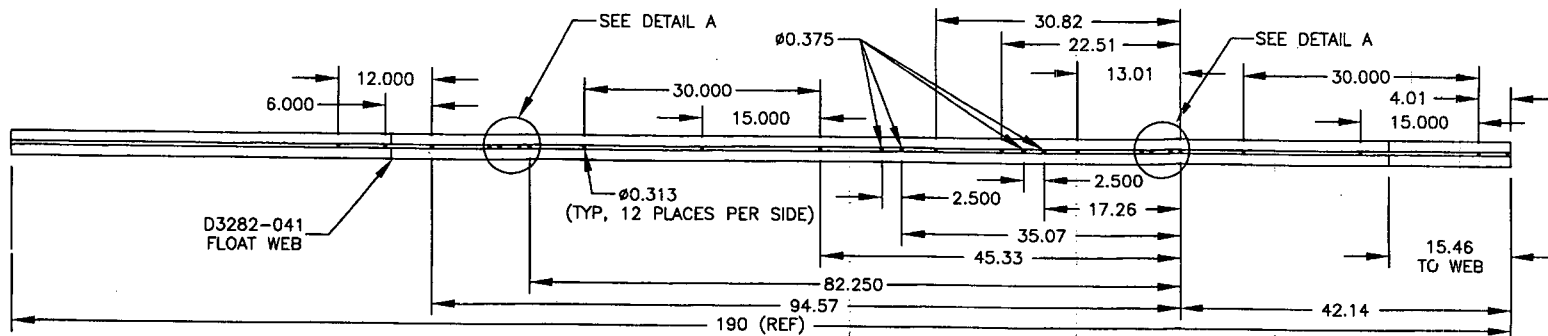
**GENERAL NOTES:**

1. TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
2. DAMAGE TOLERANCE ON FWD BEND:  
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 7 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020 DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
3. ALL HOLES DRILLED ON CENTERLINES.
4. BOND D3282-041 FLOAT WEB INTO D3274-1/-3 OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/291 ADHESIVE PER DART QSI 015. ENSURE HOLES LINE-UP.
5. WELDING TO BE DONE PER DART QSI 004.
6. FINISH: - ACID ETCH, ALODINE ASSEMBLY PER DART QSI 005 4.1  
- POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
7. DRILL Ø0.297 HOLES FOR ALS7-1032-130 INSERTS USING DT3274-1T2 BEFORE FINISH. INSTALL ALS7-1032-130 INSERTS AFTER FINISH. SEAL WEARSHOE BOLTS WITH SIKAFLEX -241/-291.
8. SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.

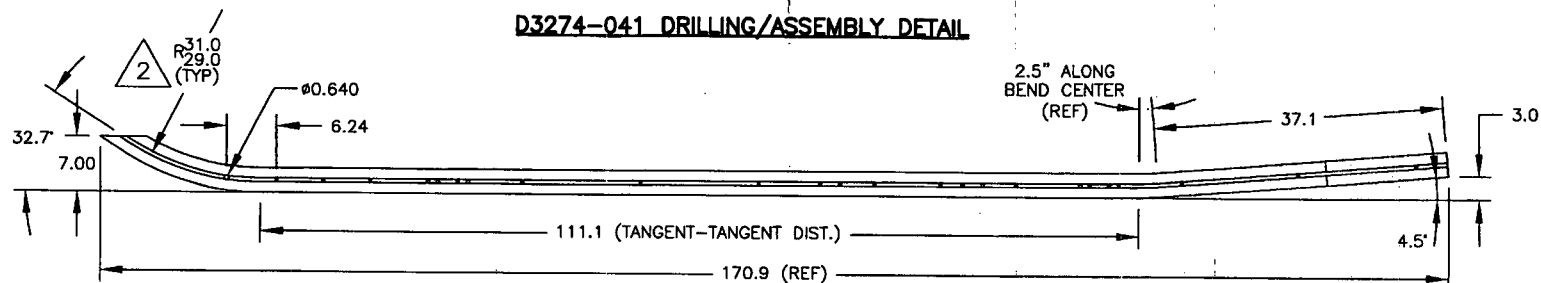
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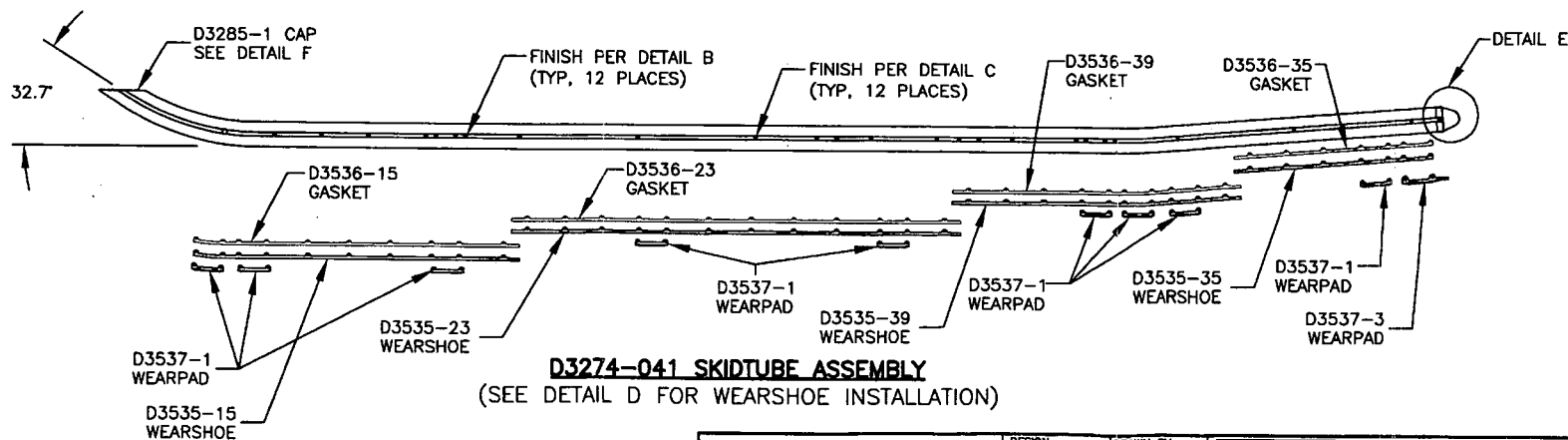
DEO ATTACHED



D3274-041 DRILLING/ASSEMBLY DETAIL



D3274-041 BEND/DRILLING DETAIL



D3274-041 SKIDTUBE ASSEMBLY  
(SEE DETAIL D FOR WEARSHOE INSTALLATION)

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER NO. 59780

P

RELEASED

07.02.12

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DART AEROSPACE USA, INC.

DESIGN CP	DRAWN BY PH	DART AEROSPACE USA, INC. PORT HADLOCK, MA	
CHECKED #	APPROVED #	DRAWING NO. D3274	REV. D SHEET 2 OF 4
DATE 06.12.19	TITLE SKIDTUBE ASSEMBLY		SCALE 1:15

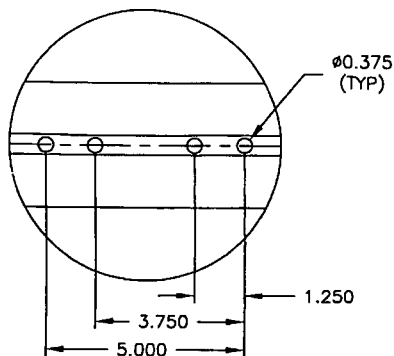
Wb 59780



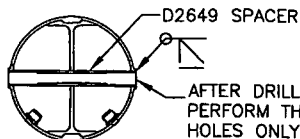
07.02.12

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	CHECKED	PH	APPROVED	PH	DRAWING NO.	REV. D
	DATE	06.12.19			D3274	SHEET 3 OF 4
					TITLE	SCALE
					SKIDTUBE ASSEMBLY	1:15

# **DETAIL A: DRILL DETAIL**

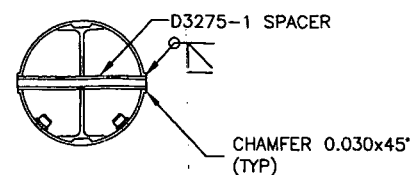


# **DETAIL B** FOR 0.375 HOLES ONLY

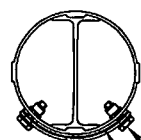


- AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR 0.375  
HOLES ONLY:
1. CHAMFER HOLE 0.030x45°
  2. INSERT D2649 SPACER
  3. WELD INTO PLACE AND GRIND FLUSH
  4. C'BORE TO 0.313x0.75 DEEP

# **DETAIL C** FOR 0.313 HOLES ONLY



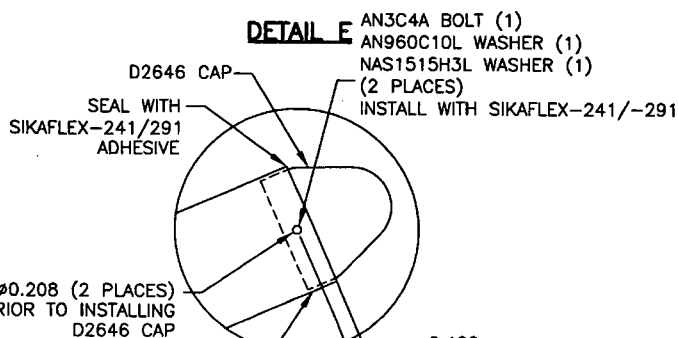
# **DETAIL D**



- ALS7-1032-130 INSERT (1)  
AN3C4A BOLT (1)  
AN960C10L WASHER (1)  
(78 PLACES)

GASKET/WEARSHOE/WEARPAD (REF)

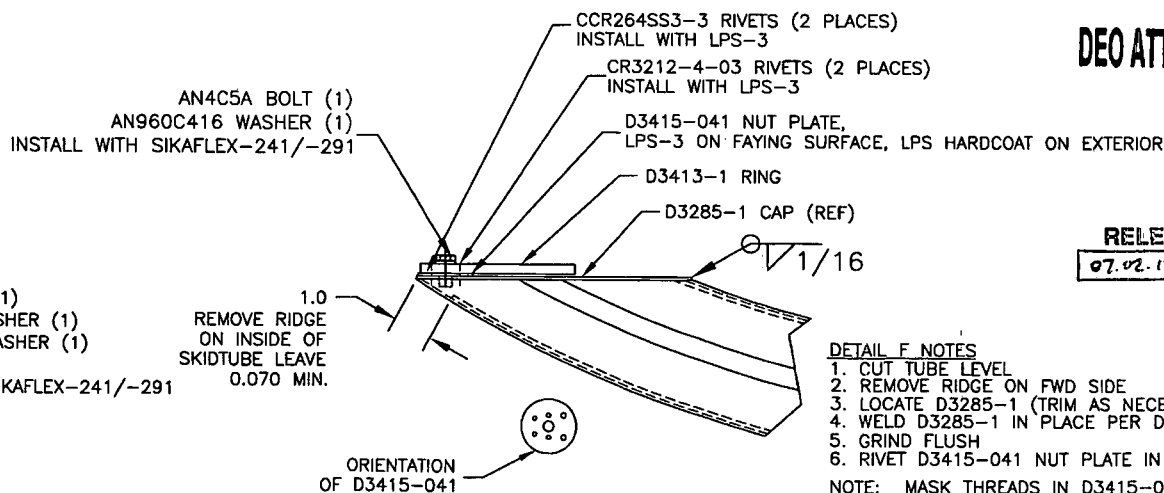
# **DETAIL E**



0.208 (2 PLACES)  
DRILL PRIOR TO INSTALLING  
D2646 CAP

BORE OUT END OF SKIDTUBE  
TO 0.75 DEPTH AND 0.070 WALL

# **DETAIL F: END FINISHING DETAIL**



# **DETAIL F NOTES**

1. CUT TUBE LEVEL
2. REMOVE RIDGE ON FWD SIDE
3. LOCATE D3285-1 (TRIM AS NECESSARY)
4. WELD D3285-1 IN PLACE PER DART QSI 004
5. GRIND FLUSH
6. RIVET D3415-041 NUT PLATE IN PLACE

NOTE: MASK THREADS IN D3415-041  
PRIOR TO FINISH

**DEO ATTACHED**

**RELEASED**  
07.02.12

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DART AEROSPACE USA, INC.

DESIGN	CP	DRAWN BY	PH	<b>DART</b> DART AEROSPACE USA, INC. PORT HADLOCK, MA	REV. D
CHECKED	#	APPROVED	#	DRAWING NO. D3274	SHEET 4 OF 4
DATE	06.12.19	TITLE	SKIDTUBE ASSEMBLY	SCALE	1:3



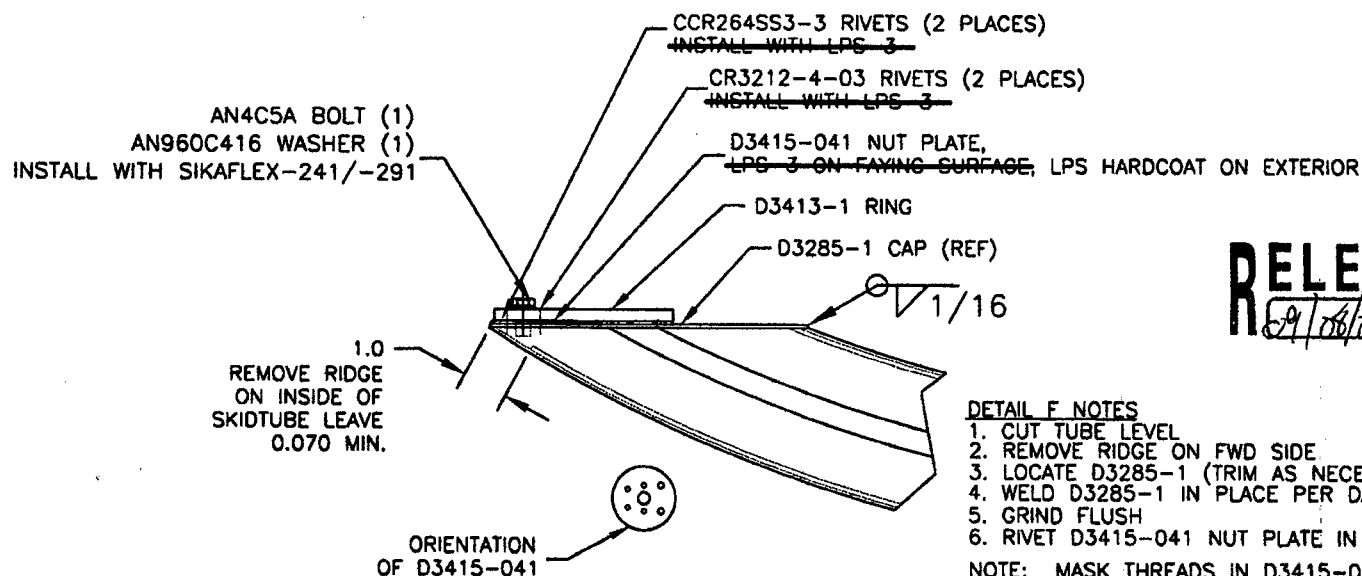
DRAWING NO. D3274	TITLE SKIDTUBE ASSEMBLY	REV. D	DART AEROSPACE USA, INC ENGINEERING ORDER	D.E.O. NO. D3274-D-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>CP</i>	CHECKED <i>[Signature]</i>	MFG. APPR. <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DE APPR. <i>[Signature]</i>		
DATE 09.06.17	DATE 09.06.23	DATE 09/06/23	DATE 09/06/23	DATE 09.06.23		

LPS-3 IS NO LONGER USED DURING ASSEMBLY OF SKIDTUBE.

AMEND NOTE 8: ~~"SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES 'LPS-3' AFTER FINISH AND INSTALLATION OF INSERTS.~~  
COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES 'LPS PROCYON' AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF  
POWDER COATING WITH MEK DEGREASER."

AMEND DETAIL F AS SHOWN:

### DETAIL F: END FINISHING DETAIL



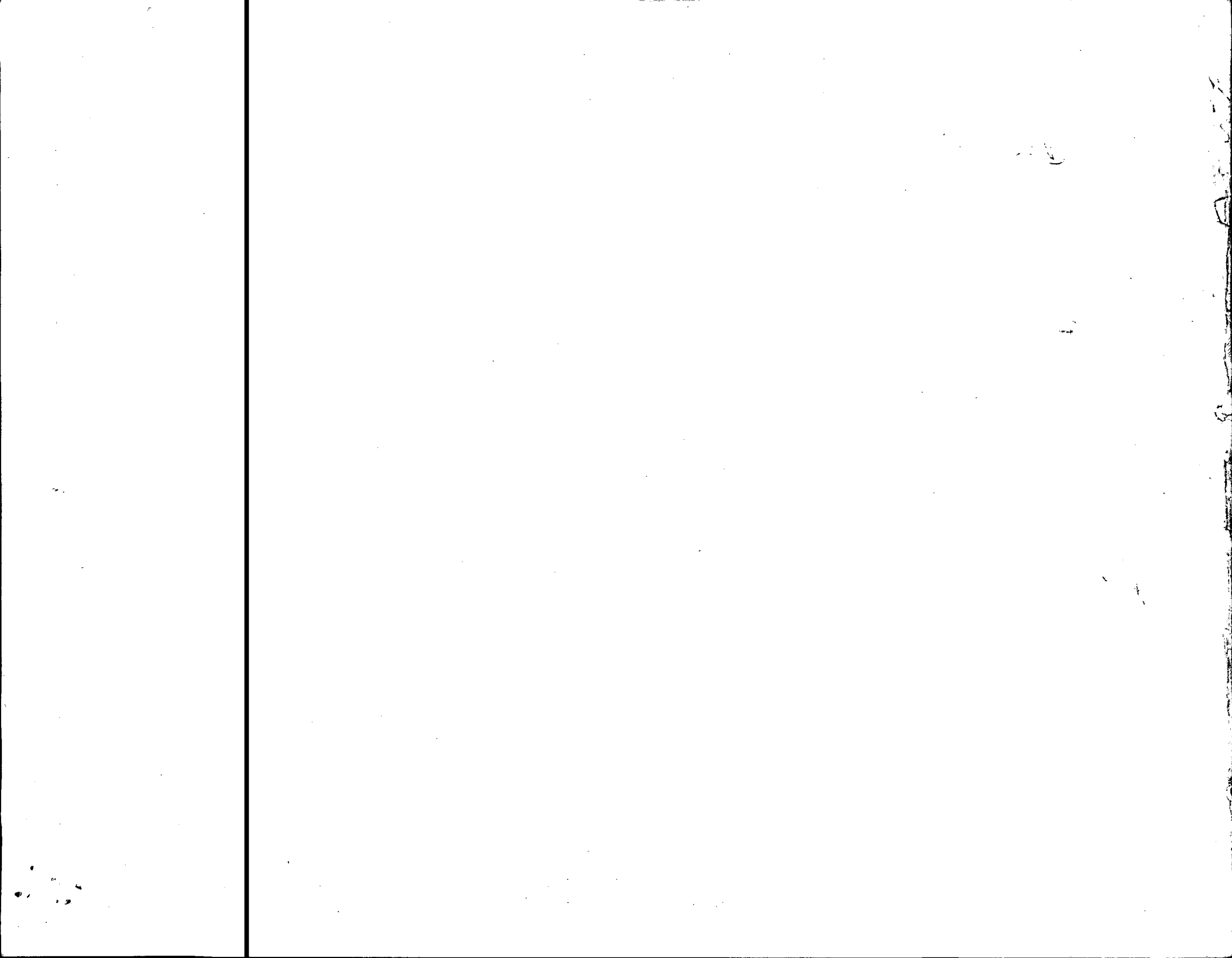
**RELEASED**  
09/06/23

#### DETAIL F NOTES

1. CUT TUBE LEVEL
2. REMOVE RIDGE ON FWD SIDE
3. LOCATE D3285-1 (TRIM AS NECESSARY)
4. WELD D3285-1 IN PLACE PER DART QSI 004
5. GRIND FLUSH
6. RIVET D3415-041 NUT PLATE IN PLACE

NOTE: MASK THREADS IN D3415-041  
PRIOR TO FINISH

*W/055780*



NO 230

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name: Barclay Elliott  
Job number: 57358  
Part number: D206-642-541  
Description: flatt tube  
Welding Process: Tig[☒] Mig[ ]  
Base material: Aluminum  
Current: AC[☒] DC[ ]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[ ]  
Penetration: pass[☒] fail[ ]

UNACCEPTABLE

Cracks: pass[☒] fail[ ]  
Undercut: pass[☒] fail[ ]  
Pin holes: pass[☒] fail[ ]  
Overlap (cold lap): pass[☒] fail[ ]  
Porosity (surface): pass[☒] fail[ ]  
Coloration: pass[☒] fail[ ]

Qualifier Lat. Hyl Date of Test Coupon 10-05-05  
Welder Barclay Elliott Date of Test Coupon 10-05-05

The above named individual is qualified in accordance with AWS D17.1.2001 to weld